IN THE CLAIMS:

1. (Original): A system comprising:

a plurality of redundant pairs of computer systems;

a plurality of actuators; and

a plurality of line replaceable units, each of the plurality of line replaceable units being coupled to one of the plurality of actuators, each of the plurality of line replaceable units being configured to receive synchronous digital control data from each pair of computer systems of the plurality of redundant pairs of computer systems.

2. (Original): The system of Claim 1, wherein the plurality of redundant pairs of computer systems includes three redundant pairs of computer systems.

3. (Original): The system of Claim 2, wherein the plurality of line replaceable units include three or more line replaceable units.

4. (Original): The system of Claim 1, wherein the plurality of line replaceable units are configured to select the digital control data of one of the computer systems of a pair of the plurality of redundant pairs of computer systems.

5. (Original): The system of Claim 4, wherein each of the plurality of line replaceable units converts the selected digital control data into an analog signal and sends the analog signal to the corresponding actuator.

6. (Original): The system of Claim 5, wherein the digital control data is one of discrete or continuous variable data.

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7. (Original): The system of Claim 6, wherein each line replaceable unit is configured to perform a validity check of each redundant pair of computer systems.

8. (Original): The system of Claim 7, wherein each line replaceable unit performs the validity check by determining if a freshness invalid signal and an error condition exists based on the corresponding digital control data and the freshness invalid signal.

9. (Original): The system of Claim 8, wherein each line replaceable unit determines if an error condition exists for each of the pairs of plurality of redundant pairs of computer systems by determining:

if a difference between the digital control data of each computer system of a pair is greater than a threshold value, then a first constant value is added to an error value;

if the difference between the digital control data from the computer systems of a pair of computer systems is less than the first threshold value, then a second constant value is subtracted from the error value;

if the error value is greater than a second threshold value, then the line replaceable unit indicates that an error condition exists with respect to the pair of computer systems; and

if the error value is at least equal to a third threshold value, then the line replaceable unit indicates that an error condition does not exist.

10. (Original): The system of Claim 9, wherein the line replaceable units repeat the determination of whether an error condition exists at a periodic rate.

11. (Original): The system of Claim 8, wherein the line replaceable units are configured to disable one or more of the redundant pairs of computer systems based on the determination of whether an error condition exists.

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12. (Original): The system of Claim 1, wherein the plurality of redundant pairs of computer systems, the plurality of actuators, and the plurality of line replaceable units are included within an aircraft.

13. (Original): The system of Claim 12, wherein the aircraft includes control surfaces that a couple to one or more of the plurality of actuators.

14. (Original): A method comprising:

generating synchronous digital control data at pair of computer systems of a plurality of redundant pairs of computer systems;

sending the generated synchronous digital control data to a plurality of line replaceable units;

selecting the digital control data of one of the computer systems of a pair of the plurality of redundant pairs of computer systems.

15. (Original): The method of Claim 14, wherein the plurality of redundant pairs of computer systems includes three redundant pairs of computer systems.

16. (Original): The method of Claim 15, wherein the plurality of line replaceable units include three or more line replaceable units.

17. (Original): The method of Claim 14, further comprising:

converting the selected digital control data into an analog signal; and

sending the analog signal to a corresponding actuator.

18. (Original): The method of Claim 17, wherein the digital control data is one of discrete or continuous variable data.

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19. (Original): The method of Claim 18, further comprising checking validity of each redundant pair of computer systems.

20. (Original): The method of Claim 19, wherein checking the validity check includes:

determining a freshness invalid signal; and

determining if an error condition exists based on the corresponding digital control data and the freshness invalid signal.

21. (Original): The method of Claim 20, wherein determining if an error condition exists includes:

if a difference between the digital control data of each computer system of a pair is greater than a threshold value, adding a first constant value to an error value;

if the difference between the digital control data from the computer systems of a pair is less than the first threshold value, subtracting a second constant value from the error value;

if the error value is greater than a second threshold value, indicating that an error condition exists with respect to the pair of computer systems; and

if the error value is at least equal to a third threshold value, indicating that an error condition does not exist.

22. (Original): The method of Claim 21, wherein determining if an error condition exists is repeated at a periodic rate.

23. (Original): The method of Claim 20, further comprising disabling one or more of the redundant pairs of computer systems based on the determining if an error condition exists.

24. (Original): A computer program product residing on a computer-readable medium for performing a method comprising:

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receiving synchronous digital control data from pair of computer systems of a plurality of redundant pairs of computer systems; and

selecting the digital control data of one of the computer systems of a pair of the plurality of redundant pairs of computer systems.

25. (Original): The product of Claim 24, wherein the plurality of redundant pairs of computer systems includes three redundant pairs of computer systems.

26. (Original): The product of Claim 25, wherein the plurality of line replaceable units include three or more line replaceable units.

27. (Original): The product of Claim 24, further comprising:

converting the selected digital control data into an analog signal; and

sending the analog signal to a corresponding actuator.

28. (Original): The product of Claim 27, wherein the digital control data is one of discrete or continuous variable data.

29. (Original): The product of Claim 28, further comprising checking validity of each redundant pair of computer systems.

30. (Original): The product of Claim 29, wherein checking the validity check includes:

determining a freshness invalid signal; and

determining if an error condition exists based on the corresponding digital control data and the freshness invalid signal.

31. (Original): The product of Claim 30, wherein determining if an error condition exists includes:

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if a difference between the digital control data of each computer system of a pair is greater than a threshold value, adding a first constant value to an error value;

if the difference between the digital control data from the computer systems of a pair is less than the first threshold value, subtracting a second constant value from the error value;

if the error value is greater than a second threshold value, indicating that an error condition exists with respect to the pair of computer systems; and

if the error value is at least equal to a third threshold value, indicating that an error condition does not exist.

32. (Original): The product of Claim 31, wherein determining if an error condition exists is repeated at a periodic rate.

33. (Original): The product of Claim 30, further comprising generating a computer system disabling signal based on the determination if an error condition exists.

34. (Original): A system comprising:

means for generating synchronous digital control data at pair of computer systems of a plurality of redundant pairs of computer systems;

means for sending the generated synchronous digital control data to a plurality of line replaceable units;

means for selecting the digital control data of one of the computer systems of a pair of the plurality of redundant pairs of computer systems.

35. (Original): The system of Claim 34, wherein the plurality of redundant pairs of computer systems includes three redundant pairs of computer systems.

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36. (Original): The system of Claim 35, wherein the plurality of line replaceable units include three or more line replaceable units.

37. (Original): The system of Claim 34, further comprising:

means for converting the selected digital control data into an analog signal; and

means for sending the analog signal to a corresponding actuator.

38. (Original): The system of Claim 37, wherein the digital control data is one of discrete or continuous variable data.

39. (Original): The system of Claim 38, further comprising means for checking validity of each redundant pair of computer systems.

40. (Original): The system of Claim 39, wherein the means for checking the validity check includes:

means for determining a freshness invalid signal; and

means for determining if an error condition exists based on the corresponding digital control data and the freshness invalid signal.

41. (Original): The system of Claim 40, wherein the means for determining if an error condition exists includes:

means for adding a first constant value to an error value, if a difference between the digital control data of each computer system of a pair is greater than a threshold value;

means for subtracting a second constant value from the error value, if the difference between the digital control data from the computer systems of a pair is less than the first threshold value;

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means for indicating that an error condition exists with respect to the pair of computer systems, if the error value is greater than a second threshold value; and

means for indicating that an error condition does not exist, if the error value is at least equal to a third threshold value.

42. (Original): The system of Claim 41, wherein the means for determining if an error condition exists repeats at a periodic rate.

43. (Original): The system of Claim 42, further comprising means for disabling one or more of the redundant pairs of computer systems based on the means for determining if an error condition exists.

44. (Original): A fly-by-wire system comprising:

a plurality of redundant pairs of computer systems;

a plurality of actuators; and

a plurality of line replaceable units, each of the plurality of line replaceable units being coupled to one of the plurality of actuators, each of the plurality of line replaceable units being configured to receive synchronous digital control data from each pair of computer systems of the plurality of redundant pairs of computer systems.

45. (Original): An aircraft comprising:

fly-by-wire system including:

a plurality of redundant pairs of computer systems;

a plurality of actuators; and

a plurality of line replaceable units, each of the plurality of line replaceable units being coupled to one of the plurality of actuators, each of the plurality of line replaceable units being configured to receive synchronous

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digital control data from each pair of computer systems of the plurality of redundant pairs of computer systems.

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